



**Recra LabNet Philadelphia
Analytical Report**

Client : TNU-HANFORD B99-078
RFW# : 9908L850
SDG/SAF# : B99-078/H0499

W.O.# : 10985-001-001-9999-00
Date Received: 08-24-99

RECEIVED
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EDMC

REVISION

METALS CASE NARRATIVE

This package has been revised to include the addition of Antimony and Thallium.

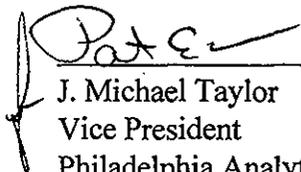
1. This narrative covers the analyses of 7 soil samples.
2. Samples were prepared and analyzed in accordance with methods checked on the attached glossary.
3. All analyses were performed within the required holding times.
4. All cooler temperatures have been recorded on the Chain of Custody.
5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).
6. All Initial and Continuing Calibration Blanks (ICB/CCBs) were within control limits (less than the PQL).
7. All preparation/method blanks (MB) were within method criteria {less than the Practical Quantitation Limit (3X the IDL) or samples greater than 20X MB value}. Refer to the Inorganics Method Blank Data Summary.
8. All ICP Interference Check Standards were within control limits.
9. All laboratory control samples (LCS) were within the laboratory control limits. Refer to the Inorganics Laboratory Control Standards Report.
10. The matrix spike (MS) recovery for 1 analyte was outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 024 pages.

11. For analytes where the ICP MS is out-of-control, a post-digestion MS (PDS) and serial dilution are performed. A PDS was prepared at the following concentration:

<u>Sample ID</u>	<u>Element</u>	<u>PDS</u> <u>Concentration (ppb)</u>	<u>PDS</u> <u>% Recovery</u>
B0W5P4	Antimony	100	104.2

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.
13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.



J. Michael Taylor
Vice President
Philadelphia Analytical Laboratory
mld/m08-850r

11-11-99
Date



METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within this

Recra Lot#: 9908L850

Leaching Procedure: 1310 1311 1312 Other:_____

CLP Metals Digestion and Analysis Methods: ILM03.0 ILM04.0

Metals Digestion Methods: 3005A 3010A 3015 3020A 3050A 3051 200.7 SS17
 Other: _____

Metals Analysis Methods

	SW846	EPA	STD MTD	EPA OSWR	USATHAMA
Aluminum	6010B	200.7			99
Antimony	✓6010B 7041 ⁵	200.7	204.2		99
Arsenic	✓6010B 7060A ⁵	200.7	206.2	3113B	99
Barium	✓6010B	200.7			99
Beryllium	✓6010B	200.7			99
Bismuth	6010B ¹	200.7 ¹		1620	99
Boron	6010B	200.7			99
Cadmium	✓6010B 7131A ⁵	200.7	213.2		99
Calcium	6010B	200.7			99
Chromium	✓6010B 7191 ⁵	200.7	218.2		SS17
Cobalt	6010B	200.7			99
Copper	✓6010B 7211 ⁵	200.7	220.2		99
Iron	6010B	200.7			99
Lead	✓6010B 7421 ⁵	200.7	239.2	3113B	99
Lithium	6010B 7430 ⁴	200.7		1620	99
Magnesium	6010B	200.7			99
Manganese	6010B	200.7			99
Mercury	7470A ³ ✓7471A ³	245.1 ²	245.5 ²		99
Molybdenum	6010B	200.7			99
Nickel	✓6010B	200.7			99
Potassium	6010B 7610 ⁴	200.7	258.1 ⁴		99
Rare Earths	6010B ¹	200.7 ¹		1620	99
Selenium	✓6010B 7740 ⁵	200.7	270.2	3113B	99
Silicon	6010B ¹	200.7		1620	99
Silica	6010B	200.7		1620	99
Silver	✓6010B 7761 ⁵	200.7	272.2		99
Sodium	6010B 7770 ⁴	200.7	273.1 ⁴		99
Strontium	6010B	200.7			99
Thallium	✓6010B 7841 ⁵	200.7	279.2	200.9	99
Tin	6010B	200.7			99
Titanium	6010B	200.7			99
Uranium	6010B ¹	200.7 ¹		1620	99
Vanadium	✓6010B	200.7			99
Zinc	✓6010B	200.7			99
Zirconium	6010B ¹	200.7 ¹		1620	99

Other: _____

Method: _____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

- U = Indicates that the parameter was not detected at or above the reported limit. The associated numerical value is the sample detection limit.
- * = Indicates that the original sample result is greater than 4x the spike amount added.

ABBREVIATIONS

- MB = Method or Preparation Blank.
MS = Matrix Spike.
MSD = Matrix Spike Duplicate.
REP = Sample Replicate
LCS = Laboratory Control Sample.
NC = Not calculated.

ANALYTICAL METAL METHODS

1. Not included in the method element list.
2. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, 0.1 grams of sample is taken to a final volume of 50 mL (including all reagents).
3. Modified Hg: Hg1 and Hg2 require less total volume of digestate due to the autosampler analysis. Sample volumes and reagents for mercury determinations in water and soil have been proportionately scaled down to adapt to this semi-automated technique. The sample volume used for water analysis is 33 mL. For soils, three 0.1 gram of sample is taken to a final volume of 50 mL (including all reagents).
4. Flame AA.
5. Graphite Furnace AA.

RFW 21-21L-033/N-10/96

Recra LabNet - Lionville

INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	BOW5P4	Silver, Total	0.09	u MG/KG	0.09	1.0
		Arsenic, Total	2.2	MG/KG	0.28	1.0
		Barium, Total	60.3	MG/KG	0.03	1.0
		Beryllium, Total	0.59	MG/KG	0.009	1.0
		Cadmium, Total	0.22	MG/KG	0.03	1.0
		Chromium, Total	6.0	MG/KG	0.07	1.0
		Copper, Total	16.4	MG/KG	0.10	1.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Nickel, Total	9.3	MG/KG	0.10	1.0
		Lead, Total	3.4	MG/KG	0.18	1.0
		Antimony, Total	0.22	u MG/KG	0.22	1.0
		Selenium, Total	0.32	u MG/KG	0.32	1.0
		Thallium, Total	0.46	u MG/KG	0.46	1.0
		Vanadium, Total	63.9	MG/KG	0.05	1.0
		Zinc, Total	48.1	MG/KG	0.07	1.0
-002	BOW5P2	Silver, Total	0.09	u MG/KG	0.09	1.0
		Arsenic, Total	2.3	MG/KG	0.29	1.0
		Barium, Total	92.6	MG/KG	0.03	1.0
		Beryllium, Total	0.79	MG/KG	0.009	1.0
		Cadmium, Total	0.15	MG/KG	0.03	1.0
		Chromium, Total	7.8	MG/KG	0.07	1.0
		Copper, Total	16.6	MG/KG	0.10	1.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Nickel, Total	11.9	MG/KG	0.10	1.0
		Lead, Total	3.6	MG/KG	0.18	1.0
		Antimony, Total	0.22	u MG/KG	0.22	1.0
		Selenium, Total	0.40	MG/KG	0.32	1.0
		Thallium, Total	0.46	u MG/KG	0.46	1.0
		Vanadium, Total	77.7	MG/KG	0.05	1.0
		Zinc, Total	54.2	MG/KG	0.07	1.0

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INORGANICS DATA SUMMARY REPORT 11/11/99

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RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	B0W5M4	Silver, Total	0.08	u MG/KG	0.08	1.0
		Arsenic, Total	2.4	MG/KG	0.28	1.0
		Barium, Total	104	MG/KG	0.03	1.0
		Beryllium, Total	0.72	MG/KG	0.008	1.0
		Cadmium, Total	0.23	MG/KG	0.03	1.0
		Chromium, Total	9.5	MG/KG	0.07	1.0
		Copper, Total	14.1	MG/KG	0.10	1.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Nickel, Total	11.4	MG/KG	0.10	1.0
		Lead, Total	4.8	MG/KG	0.18	1.0
		Antimony, Total	0.21	u MG/KG	0.21	1.0
		Selenium, Total	0.45	MG/KG	0.31	1.0
		Thallium, Total	0.44	u MG/KG	0.44	1.0
		Vanadium, Total	63.3	MG/KG	0.05	1.0
		Zinc, Total	62.1	MG/KG	0.07	1.0
-004	B0W5P3	Silver, Total	0.08	u MG/KG	0.08	1.0
		Arsenic, Total	2.3	MG/KG	0.26	1.0
		Barium, Total	81.2	MG/KG	0.02	1.0
		Beryllium, Total	0.69	MG/KG	0.008	1.0
		Cadmium, Total	0.09	MG/KG	0.02	1.0
		Chromium, Total	6.2	MG/KG	0.06	1.0
		Copper, Total	13.9	MG/KG	0.1	1.0
		Mercury, Total	0.02	u MG/KG	0.02	1.0
		Nickel, Total	8.7	MG/KG	0.1	1.0
		Lead, Total	3.4	MG/KG	0.17	1.0
		Antimony, Total	0.20	u MG/KG	0.20	1.0
		Selenium, Total	0.57	MG/KG	0.29	1.0
		Thallium, Total	0.42	u MG/KG	0.42	1.0
		Vanadium, Total	70.3	MG/KG	0.05	1.0
		Zinc, Total	49.9	MG/KG	0.06	1.0

006

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INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	BOW5M5	Silver, Total	0.08	u MG/KG	0.08	1.0
		Arsenic, Total	2.0	MG/KG	0.28	1.0
		Barium, Total	76.3	MG/KG	0.03	1.0
		Beryllium, Total	0.98	MG/KG	0.008	1.0
		Cadmium, Total	0.03	u MG/KG	0.03	1.0
		Chromium, Total	6.4	MG/KG	0.07	1.0
		Copper, Total	13.6	MG/KG	0.10	1.0
		Mercury, Total	0.01	u MG/KG	0.01	1.0
		Nickel, Total	9.7	MG/KG	0.10	1.0
		Lead, Total	3.4	MG/KG	0.18	1.0
		Antimony, Total	0.21	u MG/KG	0.21	1.0
		Selenium, Total	0.31	u MG/KG	0.31	1.0
		Thallium, Total	0.63	MG/KG	0.45	1.0
		Vanadium, Total	70.2	MG/KG	0.05	1.0
		Zinc, Total	47.2	MG/KG	0.07	1.0
-006	BOW5P7	Silver, Total	0.09	u MG/KG	0.09	1.0
		Arsenic, Total	2.8	MG/KG	0.29	1.0
		Barium, Total	64.4	MG/KG	0.03	1.0
		Beryllium, Total	0.67	MG/KG	0.009	1.0
		Cadmium, Total	1.1	MG/KG	0.03	1.0
		Chromium, Total	10.0	MG/KG	0.07	1.0
		Copper, Total	34.2	MG/KG	0.10	1.0
		Mercury, Total	0.05	MG/KG	0.01	1.0
		Nickel, Total	7.8	MG/KG	0.10	1.0
		Lead, Total	11.8	MG/KG	0.18	1.0
		Antimony, Total	0.22	u MG/KG	0.22	1.0
		Selenium, Total	0.32	u MG/KG	0.32	1.0
		Thallium, Total	0.57	MG/KG	0.46	1.0
		Vanadium, Total	45.5	MG/KG	0.05	1.0
		Zinc, Total	118	MG/KG	0.07	1.0

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INORGANICS DATA SUMMARY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-007	BOW681	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	2.5	MG/KG	0.29	1.0
		Barium, Total	78.9	MG/KG	0.03	1.0
		Beryllium, Total	1.0	MG/KG	0.009	1.0
		Cadmium, Total	0.80	MG/KG	0.03	1.0
		Chromium, Total	8.8	MG/KG	0.07	1.0
		Copper, Total	25.8	MG/KG	0.11	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Nickel, Total	9.6	MG/KG	0.11	1.0
		Lead, Total	7.5	MG/KG	0.19	1.0
		Antimony, Total	0.22 u	MG/KG	0.22	1.0
		Selenium, Total	0.33 u	MG/KG	0.33	1.0
		Thallium, Total	0.50	MG/KG	0.47	1.0
		Vanadium, Total	73.0	MG/KG	0.05	1.0
		Zinc, Total	114	MG/KG	0.07	1.0

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INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/11/99

CLIENT: TNU-HANFORD B99-078

RECRA LOT #: 9908L850

WORK ORDER: 10985-001-001-9999-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	99L0601-MB1	Silver, Total	0.10	u MG/KG	0.10	1.0
		Arsenic, Total	0.33	u MG/KG	0.33	1.0
		Barium, Total	0.19	MG/KG	0.03	1.0
		Beryllium, Total	0.01	u MG/KG	0.01	1.0
		Cadmium, Total	0.03	u MG/KG	0.03	1.0
		Chromium, Total	0.08	u MG/KG	0.08	1.0
		Copper, Total	0.12	u MG/KG	0.12	1.0
		Nickel, Total	0.12	u MG/KG	0.12	1.0
		Lead, Total	0.21	u MG/KG	0.21	1.0
		Antimony, Total	0.25	u MG/KG	0.25	1.0
		Selenium, Total	0.37	u MG/KG	0.37	1.0
		Thallium, Total	0.53	u MG/KG	0.53	1.0
		Vanadium, Total	0.06	u MG/KG	0.06	1.0
		Zinc, Total	0.23	MG/KG	0.08	1.0
BLANK1	99C0254-MB1	Mercury, Total	0.02	u MG/KG	0.02	1.0

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INORGANICS ACCURACY REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR (SPK)
-001	B0W5P4	Silver, Total	3.9	0.09u	4.4	88.6	1.0
		Arsenic, Total	165	2.2	178	91.6	1.0
		Barium, Total	215	60.3	178	86.9	1.0
		Beryllium, Total	4.7	0.59	4.4	93.4	1.0
		Cadmium, Total	4.2	0.22	4.4	90.5	1.0
		Chromium, Total	20.5	6.0	17.8	81.5	1.0
		Copper, Total	33.6	16.4	22.2	77.5	1.0
		Mercury, Total	0.12	0.01u	0.13	96.9	1.0
		Nickel, Total	46.8	9.3	44.5	84.3	1.0
		Lead, Total	43.1	3.4	44.5	89.2	1.0
		Antimony, Total	17.0	0.22u	44.5	38.2	1.0
		Selenium, Total	158	0.32u	178	89.1	1.0
		Thallium, Total	159	0.46u	178	89.7	1.0
		Vanadium, Total	104	63.9	44.5	91.2	1.0
		Zinc, Total	84.3	48.1	44.5	81.3	1.0

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INORGANICS PRECISION REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	INITIAL			DILUTION
			RESULT	REPLICATE	RPD	
-001REP	BOWSP4	Silver, Total	0.09u	0.08u	NC	1.0
		Arsenic, Total	2.2	2.1	4.7	1.0
		Barium, Total	60.3	64.2	6.3	1.0
		Beryllium, Total	0.59	0.63	6.1	1.0
		Cadmium, Total	0.22	0.20	10.0	1.0
		Chromium, Total	6.0	3.7	47.4	1.0
		Copper, Total	16.4	14.8	10.3	1.0
		Mercury, Total	0.01u	0.01u	NC	1.0
		Nickel, Total	9.3	7.4	22.8	1.0
		Lead, Total	3.4	3.3	3.0	1.0
		Antimony, Total	0.22u	0.19u	NC	1.0
		Selenium, Total	0.32u	0.28u	NC	1.0
		Thallium, Total	0.46u	0.40u	NC	1.0
		Vanadium, Total	63.9	57.9	9.9	1.0
		Zinc, Total	48.1	44.6	7.6	1.0

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INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/11/99

CLIENT: TNU-HANFORD B99-078
 WORK ORDER: 10985-001-001-9999-00

RECRA LOT #: 9908L850

SAMPLE	SITE ID	ANALYTE	SPIKED	SPIKED	UNITS	%RECOV
			SAMPLE	AMOUNT		
LCS1	99L0601-LC1	Silver, LCS	49.7	50.0	MG/KG	99.4
		Arsenic, LCS	974	1000	MG/KG	97.4
		Barium, LCS	503	500	MG/KG	100.5
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Cadmium, LCS	24.6	25.0	MG/KG	98.4
		Chromium, LCS	50.5	50.0	MG/KG	101.0
		Copper, LCS	126	125	MG/KG	100.4
		Nickel, LCS	198	200	MG/KG	99.0
		Lead, LCS	245	250	MG/KG	98.0
		Antimony, LCS	296	300	MG/KG	98.5
		Selenium, LCS	948	1000	MG/KG	94.8
		Thallium, LCS	986	1000	MG/KG	98.6
		Vanadium, LCS	257	250	MG/KG	102.9
		Zinc, LCS	97.1	100	MG/KG	97.1
LCS1	99C0254-LC1	Mercury, LCS	0.97	1.0	MG/KG	96.7

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BOW5P4						
SILVER, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
SILVER, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
SILVER, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
MERCURY, TOTAL	001	S	99C0254	08/19/99	08/26/99	08/27/99
MERCURY, TOTAL	001 REP	S	99C0254	08/19/99	08/26/99	08/27/99
MERCURY, TOTAL	001 MS	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
NICKEL, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
NICKEL, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	001	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	001 REP	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	001 MS	S	99L0601	08/19/99	09/01/99	09/03/99

B0W5P2

SILVER, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
MERCURY, TOTAL	002	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	002	S	99L0601	08/19/99	09/01/99	09/03/99

B0W5M4

SILVER, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	003	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	003	S	99L0601	08/19/99	09/01/99	09/03/99

BOW5P3

SILVER, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ARSENIC, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
BARIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
BERYLLIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
CADMIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
CHROMIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
COPPER, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
MERCURY, TOTAL	004	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
LEAD, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ANTIMONY, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
SELENIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
THALLIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
VANADIUM, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99
ZINC, TOTAL	004	S	99L0601	08/19/99	09/01/99	09/03/99

BOW5M5

SILVER, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
CADMIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	005	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
SELENIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	005	S	99L0601	08/19/99	09/01/99	09/07/99

B0W5P7

SILVER, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
CADMIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	006	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
LEAD, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
SELENIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	006	S	99L0601	08/19/99	09/01/99	09/07/99

B0W681

SILVER, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ARSENIC, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
BARIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
BERYLLIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
CADMIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
CHROMIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
COPPER, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
MERCURY, TOTAL	007	S	99C0254	08/19/99	08/26/99	08/27/99
NICKEL, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
LEAD, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ANTIMONY, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99

016

Recra LabNet - Lionville Laboratory
 INORGANIC ANALYTICAL DATA PACKAGE FOR
 TNU-HANFORD B99-078

DATE RECEIVED: 08/24/99

RFW LOT # :9908L850

CLIENT ID /ANALYSIS	RFW #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
THALLIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
VANADIUM, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99
ZINC, TOTAL	007	S	99L0601	08/19/99	09/01/99	09/07/99

LAB QC:

SILVER LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
SILVER, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ARSENIC LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ARSENIC, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
BARIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
BARIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
BERYLLIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
BERYLLIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
CADMIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
CADMIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
CHROMIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
CHROMIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
COPPER LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
COPPER, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
MERCURY LABORATORY	LC1 BS	S	99C0254	N/A	08/26/99	08/27/99
MERCURY, TOTAL	MB1	S	99C0254	N/A	08/26/99	08/27/99
NICKEL LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
NICKEL, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
LEAD LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
LEAD, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ANTIMONY LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ANTIMONY, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
SELENIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
SELENIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
THALLIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
THALLIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
VANADIUM LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
VANADIUM, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99
ZINC LABORATORY	LC1 BS	S	99L0601	N/A	09/01/99	09/03/99
ZINC, TOTAL	MB1	S	99L0601	N/A	09/01/99	09/03/99

017



99082850

ALL FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS 8 metals

Client <u>TWC Hanford B99-078</u>	Refrigerator #	1	6						6	6	6	
Est. Final Proj. Sampling Date	#/Type Container	Liquid										
Project # <u>10485-001-001-9999-00</u>		Solid	1g	1g	1				1g	1g	1g	
Project Contact/Phone #	Volume	Liquid										
RECRA Project Manager <u>OT</u>		Solid	250	500	1				500	250	1000	
QC <u>Spec</u> Del <u>std</u> TAT <u>30 day</u>	Preservatives											
Date Rec'd <u>8/24/99</u> Date Due <u>9/23/99</u>	ANALYSES REQUESTED →	ORGANIC					INORG					
Account #		VOA	BNA	Pes/PCB	Herb		Metal	CN				

MATRIX CODES: S - Soil SE - Sediment SO - Solid SL - Sludge W - Water O - Oil A - Air DS - Drum Solids DL - Drum Liquids L - EP/TCLP Leachate WI - Wipe X - Other F - Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓)		Matrix	Date Collected	Time Collected	RECRA LabNet Use Only										
			MS	MSD				VOA	BNA	Pes/PCB	Herb	INORG	Metal	CN				
													PH	Angled				
	001	BOW SPA			S	8/19/99	1145	X	X	X		X	X	X	X	X	X	
	2	SPA					1105											
	3	SPA					1025											
	4	SPA					1121											
	5	SPA					1050											
	6	SPA					0900											
	7	SPA					0900											

11/3/99
SB and TL added to all metals samples per client

Run matrix QC

Special Instructions:

Self # B99-078

COMPOSITE WASTE

DATE/REVISIONS:

1. Met ① = As, Ba, Be, Cd, Cr, Cu, Pb, Ni, Se
2. Ag, V, Zn, Hg, ICR6
3. Anal ② = IN3N2, ICCL, ICFL, ICNO2, ICNO3,
4. ICPO4, ICSPA, ISEF, INH3N, ICNTD
5. * 423579528602-3.70C
6. 423579528598-4.20C

RECRA LabNet Use Only

Samples were: 1) Shipped <input checked="" type="checkbox"/> or Hand Delivered <input type="checkbox"/> Airbill # <u>*</u> 2) Ambient or <u>Chilled</u> 3) Received in Good Condition <input checked="" type="checkbox"/> or N 4) Labels Indicate Properly Preserved <input checked="" type="checkbox"/> or N 5) Received Within Holding Times <input checked="" type="checkbox"/> or N	COC Tape was: 1) Present on Outer Package <input checked="" type="checkbox"/> or N 2) Unbroken on Outer Package <input checked="" type="checkbox"/> or N 3) Present on Sample <input checked="" type="checkbox"/> or N 4) Unbroken on Sample <input checked="" type="checkbox"/> or N COC Record Present Upon Sample Rec't <input checked="" type="checkbox"/> or N Cooler Temp. <u>5.1</u> °C
---	--

Relinquished by	Received by	Date	Time
FedEx	<u>Janson</u>	8/24/99	0930

Relinquished by	Received by	Date	Time
	ORIGINAL		
	REWRITTEN		

Discrepancies Between Samples Labels and COC Record? Y or N
 NOTES:
*4019645195

810

Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-078-38		Page 1 of 2	
Collector Brent Porter		Company Contact Chris Cearlock		Telephone No. 372-9574		Project Coordinator Trent, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-3 >15' bgs		24 - 25		SAF No. B99-078			
Ice Chest No. 96-006		Field Logbook No. FL 1511				Method of Shipment Federal Express			
Shipped To TMA/RECRA 7B 8-19-99		Offsite Property No. A990223				Bill of Lading/Air Bill No. 423579528602 - 3.7			
						COA B20CW1671C			

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL

SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time										
BOW5P4	Soil	8-19-99	1145						X	X	X	X	X
													BOW5L

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.						Matrix *	
Relinquished By Brent Porter	Date/Time 8/19/99 15:00	Received By Refer IB	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2:NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 COLLECTOR UNAVAILABLE TO SIGN COL						Soil Water Vapor Other Solid Other Liquid	
Relinquished By REF IB 82399	Date/Time 1100	Received By 25604 JPL 82399	Date/Time 1100								
Relinquished By JSCAL/JSC 82399	Date/Time 1100	Received By FED EX	Date/Time								
Relinquished By Decker	Date/Time	Received By Janson	Date/Time 8/24/99 0930								
LABORATORY SECTION	Received By	Title								Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method	Disposed By								Date/Time	

019

Collector Brent Porter	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator Trent, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 >15' bgs	17-18'	SAF No. B99-078		
Ice Chest No. 96006	Field Logbook No. EL 1511	Method of Shipment Federal Express			
Shipped To TMA/RECRA 8/21/99	Offsite Property No. A990223	Bill of Lading/Air Bill No. 423579528602			
COA B 20CW1 67/C					

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
Special Handling and/or Storage	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL	

SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.
Sample No.	Matrix *	Sample Date	Sample Time										
BOW5P2	Soil	8-19-99	1105						X	X	X	X	X
													BOW5P2

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.								Matrix *		
Relinquished By Brent Porter	Date/Time 8/19/99 1500	Received By Beler IB	Date/Time 8/19/99 1500	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 COLLECTOR UNAVAILABLE TO SIGN COL								Soil Water Vapor Other Solid Other Liquid		
Relinquished By RET IB	Date/Time 82399 1100	Received By SJOHNSON	Date/Time 82399 1100											
Relinquished By SJOHNSON	Date/Time 82399 1100	Received By FED EX	Date/Time											
Relinquished By Zeebae	Date/Time	Received By Janson	Date/Time 8/24/99 0930											
LABORATORY SECTION	Received By	Title										Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By										Date/Time	

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-078-31		Page 1 of 1			
Collector Brent Porter		Company Contact Chris Cearlock		Telephone No. 372-9574		Project Coordinator TRENT, SJ		Price Code 8N		Data Turnaround 45 Days	
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-3 <15' bgs		12-17		SAF No. B99-078					
Ice Chest No. SML185		Field Logbook No. FL 1511		Method of Shipment Federal Express							
Shipped To TMA/RECRA 878 8-12-99		Offsite Property No. A990 223		Bill of Lading/Air Bill No. 423579528598 - 4.2							
						COA B20CMI 671C					

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
Special Handling and/or Storage	No. of Container(s)	1	1	1	1	1	1	1	1		
	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.		
Sample No.	Matrix *	Sample Date	Sample Time								
B0W5M4	Soil	8-18-99	1025			X	X	X	X	X	Bowsl

CHAIN OF POSSESSION		Sign/Print Names				SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.				Matrix *	
Relinquished By Brent Porter	Date/Time 8/19/99 15:00	Received By Refer JB	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) {Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc}; Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 {Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 (3) Gamma Spectroscopy {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Strontium-89,90 -- Total Sr; Total Uranium {Uranium}; Isotopic Plutonium; Isotopic Thorium {Thorium-232}; Americium-241 COLLECTOR UNAVAILABLE TO SIGN COL				Soil Water Vapor Other Solid Other Liquid			
Relinquished By REF IB 82399 1100	Date/Time 8/23/99 1100	Received By SIGALE APDALE 82399 1100	Date/Time 8/23/99 1100								
Relinquished By SOMALI APDALE 82399	Date/Time 8/23/99	Received By FEDEX	Date/Time								
Relinquished By Jed-uc	Date/Time	Received By Jungson	Date/Time 8/24/99 0930								
LABORATORY SECTION	Received By	Title				Disposed By				Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method				Disposed By				Date/Time		

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Collector Brent Porter	Company Contact Chris Cearlock	Telephone No. 372-9574	Project Coordinator Trent, SJ	Price Code 8N	Data Turnaround 45 Days
Project Designation 200 Area Source characterization - 200-CW-1 OU	Sampling Location GP-3 >15' bgs	17.5 20.5	SAF No. B99-078		
Ice Chest No. SML-185	Field Logbook No. EL 1511	Method of Shipment Federal Express			
Shipped To TMA/RECRA 8/20/99-19-99	Offsite Property No. A990223	Bill of Lading/Air Bill No. 423579528598			
COA B20CW1671C					

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	None	None	None	None	Cool 4C	None	Cool 4C	None	Cool 4C
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG	aG
	No. of Container(s)	1	1	1	1	1	1	1	1	1	1	1
Special Handling and/or Storage	Volume	60mL	60mL	60mL	60mL	120mL	250mL	250mL	500mL	500mL	1000mL	1000mL

SAMPLE ANALYSIS	Isotopic Uranium	Neptunium-237	Nickel-63	Technetium-99	Tritium - H3	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions

Sample No.	Matrix *	Sample Date	Sample Time									
B0W5P3	Soil	8-19-99	1128					X	X	X	X	X
												Bow5L9

CHAIN OF POSSESSION	Sign/Print Names		SPECIAL INSTRUCTIONS				Matrix *			
	See chain of custody comments on SAF B99-078.		(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 COLLECTOR UNAVAILABLE TO SIGN LOC							
	Relinquished By <i>Brent Porter</i>	Date/Time 8/19/99 15:00						Received By <i>Refer IB</i>	Date/Time 8/19/99 15:00	Soil Water Vapor Other Solid Other Liquid
	Relinquished By <i>REF IB</i>	Date/Time 8/23/99 1100						Received By <i>SJOCAL/Alh</i>	Date/Time 8/23/99 1100	
Relinquished By <i>SJOCAL/Alh</i>	Date/Time 8/23/99 1100	Received By <i>FED EX</i>					Date/Time			
Relinquished By <i>Redue</i>	Date/Time	Received By <i>Janson</i>	Date/Time 8/24/99 0930							
LABORATORY SECTION	Received By	Title		Date/Time						
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By		Date/Time					

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-078-32		Page 1 of 1	
Collector Brent Porter		Company Contact Chris Cearlock		Telephone No. 372-9574		Project Coordinator Trent, SJ		Price Code 8N	
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-3 <15' bgs		14' - 15'		SAF No. B99-078		Data Turnaround 45 Days	
Ice Chest No. SML 185		Field Logbook No. FLK11		Method of Shipment Federal Express					
Shipped To TMA/RECRA 8/18/99		Offsite Property No. A990223		Bill of Lading/Air Bill No. 423579528598					
				COA B20CWI 671C					

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG
Special Handling and/or Storage	No. of Container(s)	1	1	1	1	1	1	1	1
	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL
SAMPLE ANALYSIS		Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL), VOA - 8260A (Add-On) [1-Propanol, Ethanol]	pH (Soil) - 9045	Semi-VOA - 8270A (TCL), TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions	See item (2) in Special Instructions	See item (3) in Special Instructions
Sample No.	Matrix *	Sample Date	Sample Time						
BOW5M5	Soil	8-19-99	1050		X	X	X	X	X

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.				Matrix *	
Relinquished By Brent Porter	Date/Time 8/19/99 15:00	Received By Kater JB	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) [Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc]; Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 [Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate]; Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 (3) Gamma Spectroscopy [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241]; Strontium-89.90 - Total Sr; Total Uranium [Uranium]; Isotopic Plutonium; Isotopic Thorium [Thorium-232]; Americium-241 COLLECTOR UNAVAILABLE TO SIGN COC				Soil Water Vapor Other Solid Other Liquid	
Relinquished By REF 1-B	Date/Time 8/23/99 1100	Received By SIGNATURE	Date/Time 8/23/99 1100						
Relinquished By S. JORDAN	Date/Time 8/23/99 1100	Received By FED EX	Date/Time						
Relinquished By Deelwe	Date/Time	Received By JUNSON	Date/Time 8/23/99 0930						
LABORATORY SECTION	Received By	Title						Date/Time	
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time		

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Bechtel Hanford Inc.		CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST				B99-078-41		Page 1 of 1	
Collector Brent Porter		Company Contact Chris Cearlock		Telephone No. 372-9574		Project Coordinator Trent, SJ		Price Code 8N Data Turnaround 45 Days	
Project Designation 200 Area Source characterization - 200-CW-1 OU		Sampling Location GP-3 <15' bgs		9.5 - 10.5		SAF No. B99-078			
Ice Chest No. SML-161		Field Logbook No. EL1511				Method of Shipment Federal Express			
Shipped To TMA/REORA 400 82399 to 70 8-19-99 REORA		Offsite Property No. N/A				Bill of Lading/Air Bill No. N/A 4019645195-5.1			
						COA B20CW1671C			

POSSIBLE SAMPLE HAZARDS/REMARKS	Preservation	None	None	Cool 4C	None	Cool 4C	None	Cool 4C	None		
	Type of Container	aG	aG	aG	aG	aG	aG	aG	aG		
	No. of Container(s)	1	1	1	1	1	1	1	1		
Special Handling and/or Storage	Volume	60mL	60mL	250mL	250mL	500mL	500mL	1000mL	1000mL		

SAMPLE ANALYSIS				Isotopic Uranium	Neptunium-237	VOA - 8260A (TCL); VOA - 8260A (Add-On) (1-Propanol, Ethanol)	pH (Soil) - 9045	Semi-VOA - 8270A (TCL); TPH-Diesel Range - WTPH-D; PCBs - 8082	See item (1) in Special Instructions.	See item (2) in Special Instructions.	See item (3) in Special Instructions.
Sample No.	Matrix *	Sample Date	Sample Time								
BOW5P7	Soil	8-19-99	0900			X	X	X	X	X	
BOW681	Soil	8-19-99	0900			X	X	X	X	X	

CHAIN OF POSSESSION		Sign/Print Names		SPECIAL INSTRUCTIONS See chain of custody comments on SAF B99-078.				Matrix *	
Relinquished By <i>Brent Porter</i>	Date/Time 8/19/99 15:00	Received By <i>Keter IB</i>	Date/Time 8/19/99 15:00	(1) ICP Metals - 6010A (Supertrace) (Arsenic, Barium, Beryllium, Cadmium, Chromium, Copper, Lead, Nickel, Selenium, Silver, Vanadium, Zinc); Mercury - 7471 - (CV); Chromium Hex - 7196 (2) NO2/NO3 - 353.1; IC Anions - 300.0 (Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); Sulfides - 9030; Ammonia - 350.3; Total Cyanide - 9010 (3) Gamma Spectroscopy (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Strontium-89,90 - Total Sr; Total Uranium (Uranium); Isotopic Plutonium; Isotopic Thorium (Thorium-232); Americium-241 COLLECTOR UNAVAILABLE TO SIGN COC.				Soil Water Vapor Other Solid Other Liquid	
Relinquished By <i>RGF IB</i>	Date/Time 82399 0900	Received By <i>SJ OALF/ALH</i>	Date/Time 82399 0900						
Relinquished By <i>SSCALE</i>	Date/Time 82399 0900	Received By <i>FED EX</i>	Date/Time						
Relinquished By <i>Dedee</i>	Date/Time	Received By <i>Janson</i>	Date/Time 8/24/99 0930						
LABORATORY SECTION	Received By	Title		Date/Time					
FINAL SAMPLE DISPOSITION	Disposal Method		Disposed By				Date/Time		

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